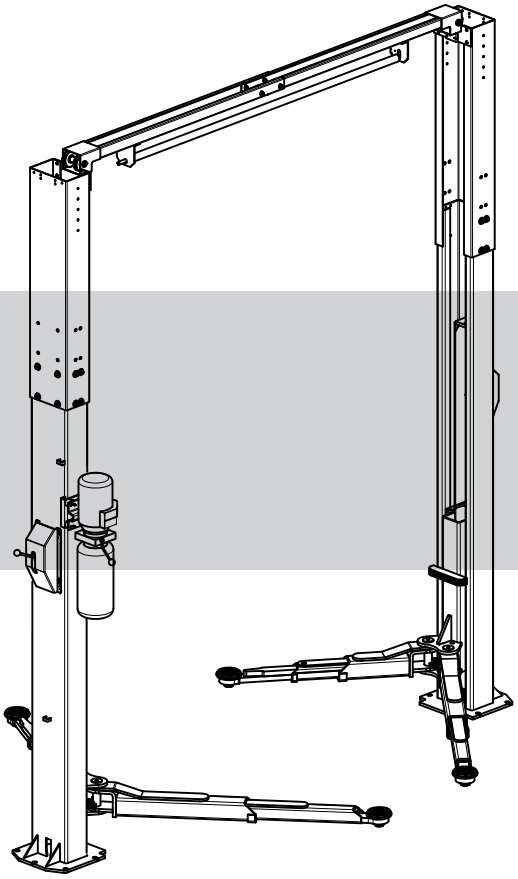
SB40: 2 POST HOIST

Installation/Operation & Maintenance Manual



SB40

BRADBURY

Please read this manual before you get started.
You must read and understand the precautions for safety purposes and any damages that may occur to your property.

Updated 19/05/21

NOTE TO THE USER

Please read this instruction carefully for safety and proper use of the car hoist, and retain it for future reference.

- This Manual is for model: SB40
  Design Registration V1803235
  Vehicle Hoist - Model No. SB40
- As for the assurance of safety in design and construction of car hoist, read this Manual first.
- Please make sure that this Manual is delivered to end users for their implementation of safety.
- Don't use the car hoist in a potentially explosive atmosphere.

This manual was prepared in December of 2018. The Specifications/images are subject to change without prior notice, images and sketches are for illustration purposes only.

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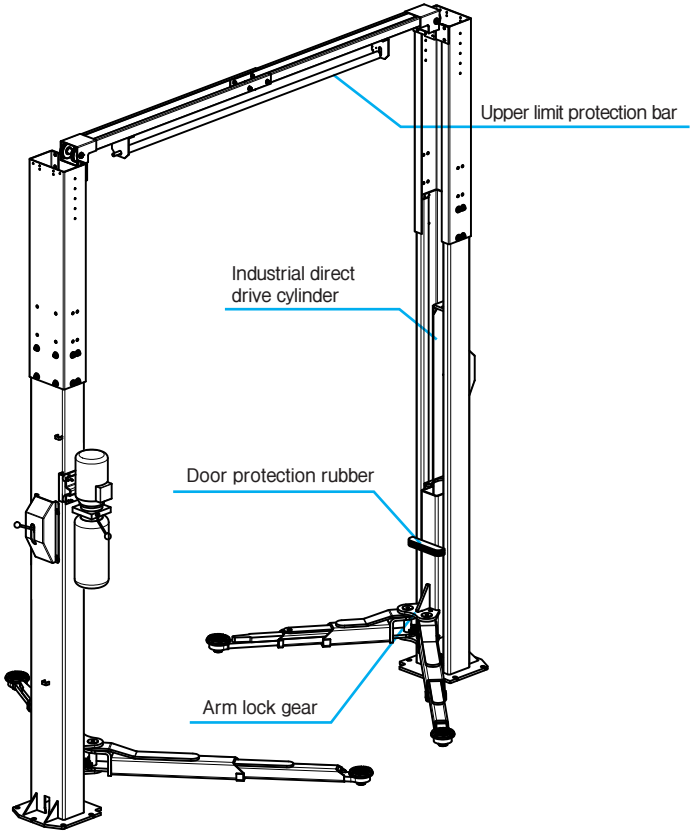
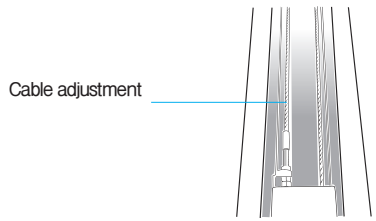
Features and Characteristics



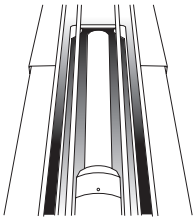
■ Upper limit protection bar

▶A limit bar prevents the vehicle from being lifted too high.
This feature effectively protects taller vehicles from being damaged.



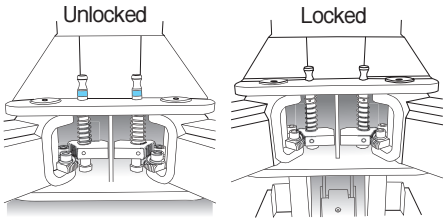
Cable adjustment

▶Correct adjustment ensures synchronization of both carriages.



Operation of ram type cylinder

Two individual cylinders ensure reliability and longevity.



Powerful arm lock gear

▶At the bottom position the gears are unlocked to allow arm adjustment. When the hoist is raised the gears are automatically locked ensuring complete safety.

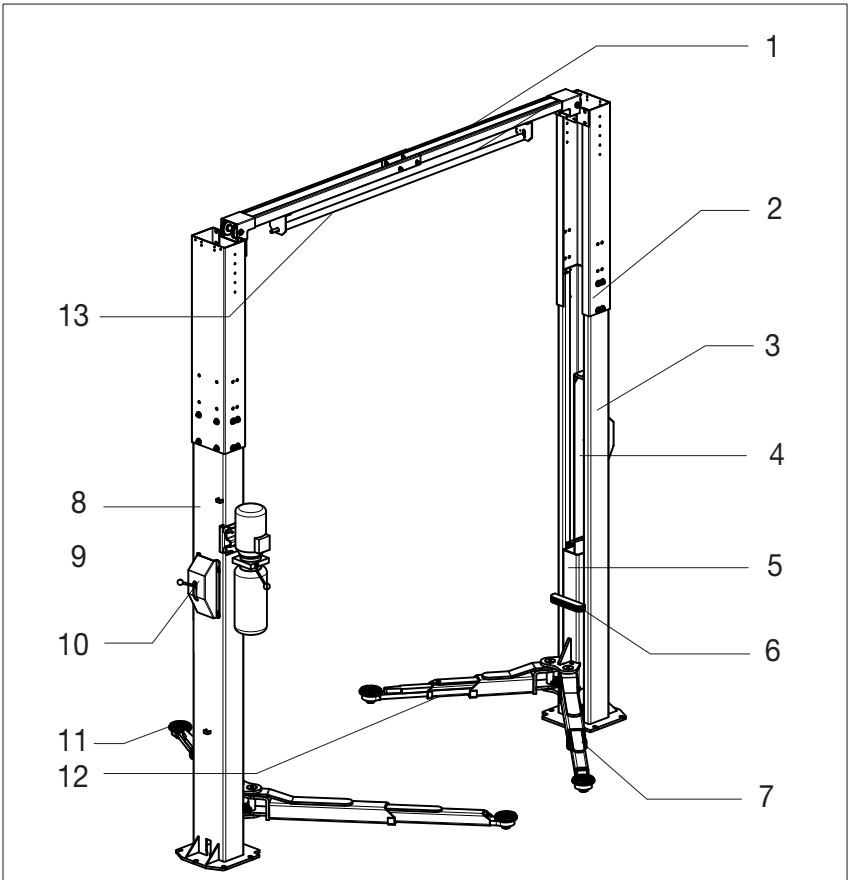
Door protection rubber

▶Vehicle door protect during working.

Safety locker

▶Safety locker system.

Part Descriptions



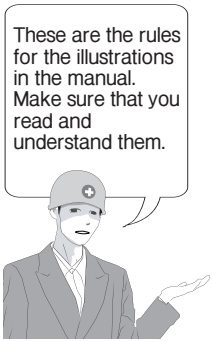
1	Cross beam	9	Power Pack
2	Post extension	10	Locker cover & Locker(inside)
3	Slave post	11	Pick-up pad
4	Cylinder	12	Short arm
5	Carriage	13	Top limit touch bar
6	Door protection rubber pad		
7	Long arm		
8	Drive post		

Specification

MODEL	SB40
CAPACITY	4,000 Kg
MAX. PRESSURE	14 Mpa
MAX.HEIGHT	1,895~1,940 mm
MIN. HEIGHT	95~140 mm
STROKE	1,800 mm
LIFTING TIME	Approx. 45 ~ 60 sec
LOWERING TIME	Approx . 35 ~ 50 sec.
POWER & MOTOR	3Ph, 2.2Kw, 2Poles, 415V, 50Hz 1Ph, 2.2Kw, 2Poles, 240V, 50Hz
NET WEIGHT	700 kg

Danger/Warning/Caution

Rules for illustrations in the manual



- Danger — Make sure you follow the instructions. otherwise critical injuries can occur.
- Warning — Make sure you follow the instructions, otherwise critical injury or damage can occur.
- Caution — Make sure you follow the instructions otherwise injury or damage can occur.
- Tip — The terms are described to enhance the understanding of the equipment.
- Point — Information to use the equipment efficiently.
- Stop! — Precautions or check points for the use of the equipment.
- Please refer to the page

Danger

Do not come under the vehicle during operation.

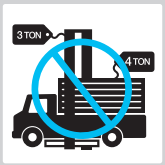
▶ It may cause severe injuries.

Evacuate to a safe place instantly in the event that the vehicle tips.

▶ It may cause severe injuries.

Do not overload the rated capacity.

▶ It may cause severe injuries.



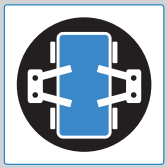
※Fail to follow the instructions can lead to a critical accident involving your life. Make sure you follow the instructions.

Warning

Warning before using the equipment

Only trained personnel may operate the equipment. Inexperience can cause accidents.

Position the vehicle to make sure that it is balanced front and rear, right and left (otherwise the vehicle may fall off).



Do not operate damaged equipment (a critical accident could occur – contact your supplier

After that a vehicle is placed on the hoist make sure that the hand brake is applied. Passenger transport is forbidden.

Warning

Warning when operating

Allow no unauthorized persons in the work area.

Before lowering the hoist, check that there are no obstructions under the vehicle or the hoist arms.

When the vehicle is lifted, do not rock it as this may dislodge it.

Do not raise a vehicle using one pair of arms only.

Warning

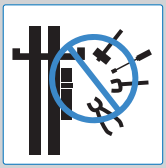
Warning when operating

To avoid injury, keep your feet clear of the arms and carriages.

Before going under the hoist, make sure that the safety pawls are engaged.

To avoid being electrocuted, disconnect the main power before opening the control panel.

Do not modify the control panel or the safety functions as this may impair their function.



Caution

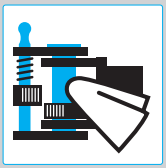
Warning when operating

Do not rock the vehicle when lifted. Do not use a high pressure cleaner as the vehicle lower part.

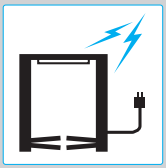
Read and fully understand the manual before using the hoist.

Warning before using the equipment

Check the safety devices to see that they are clean and operable.



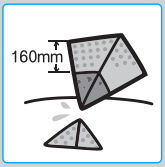
If the hoist is idle for a long time, disconnect the main power supply. In the event of thunder storm. disconnect the main power supply.



Check List Before Installing

Installation site

The site must be flat and horizontal. The floor must have minimum 160mm depth of reinforced concrete.

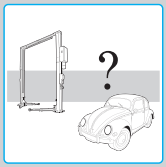


Surface load under the posts must be minimum 25N/㎟

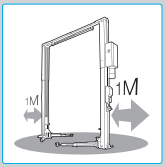
Ambient temperature 10℃ to 50℃. Do not operate under freezing conditions.

Installation site

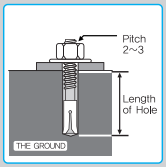
Vehicle access to the hoist must be safe and easy.



There must be a safe working distance of minimum 1m between the hoist and the wall or any fixed object.



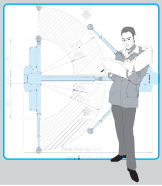
To ensure that the anchor is secure, the hole for an anchor bolt must be more than 2/3 of the bolt length.



Installation site

To maintain the warranty, the hoist is intended for indoor installation only. In the event that it is installed outside it should be protected from snow and rain. Outdoor installation makes the warranty invalid.

Only competent technicians shall install the hoist, otherwise a failure may occur.



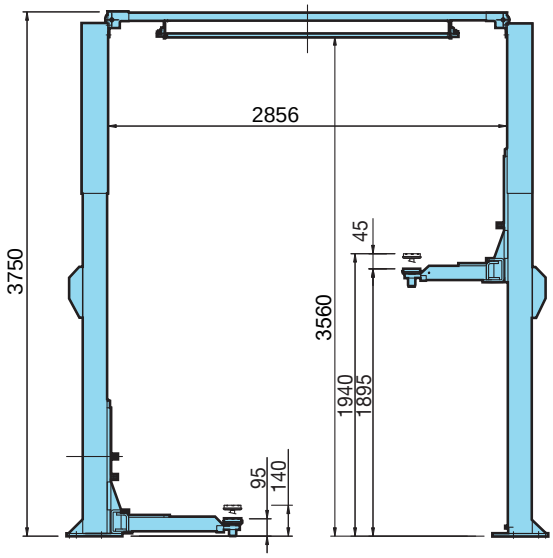
Caution

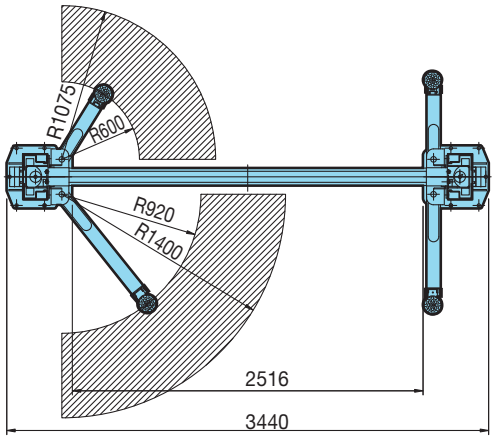
The hoist must be installed by competent technicians. Failure to observe this makes the hoist warranty invalid. If the hoist is to be moved to another site at a later date, it must be reinstalled by competent technicians.

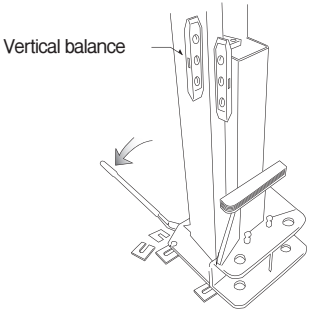
Place of Installation-Layout

Check points before selecting the place of installation.

① Distance from wall or any fixed object
② Drive-on direction
③ Positions of power post and slave post
④ Ceiling height and height of cross member







■Setting up a post

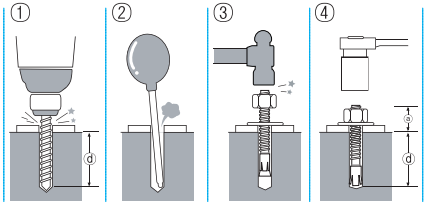
▶Before securing with anchor bolts, ensure that the post is vertical in both directions.

1 Adjusting verticality

Check that the post is vertical in both directions and adjust by means of the shim plates provided.

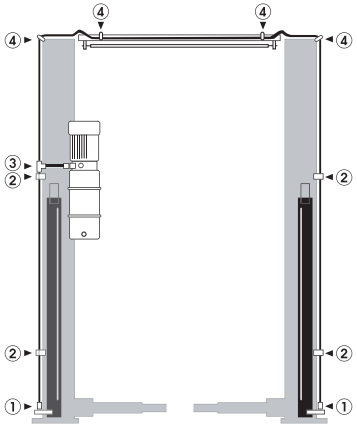
2 Fixing the post

Fix by anchor bolts.



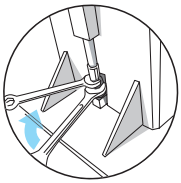
Anchor bolt installation

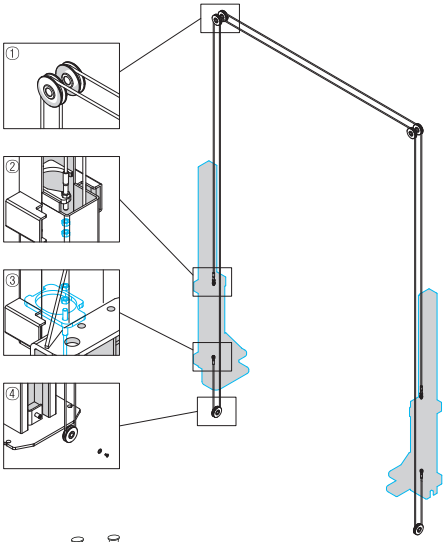
① Drill a hole
② Clean the inside of the hole
③ Put an anchor bolt into the hole and hammer it until it reaches the bottom of the hole
④ Tighten the bolt with a spanner (ⓐ:35~45mm)
(Tighten more 80N.m~100N.m)



■Connection of the hydraulic hose

▶Before setting up the post, connect the hydraulic hose and tighten it with a 19/17mm spanner. Check for oil leakage.

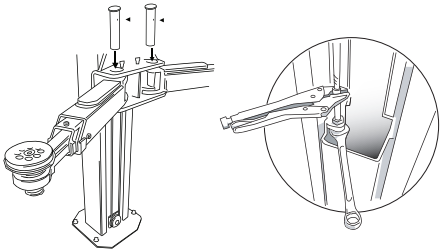




■Cable synchronization

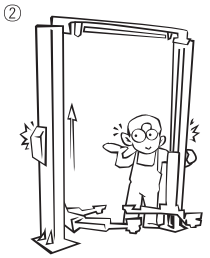
▶The cables ensure synchronization between the carriage on the power post and the carriage on the slave post.

① Top roller for cable.
② Synchronization cable from the opposite carriage.
③ Synchronization cable mounting bracket.
④ Bottom roller for cable.



Adjusting the cables

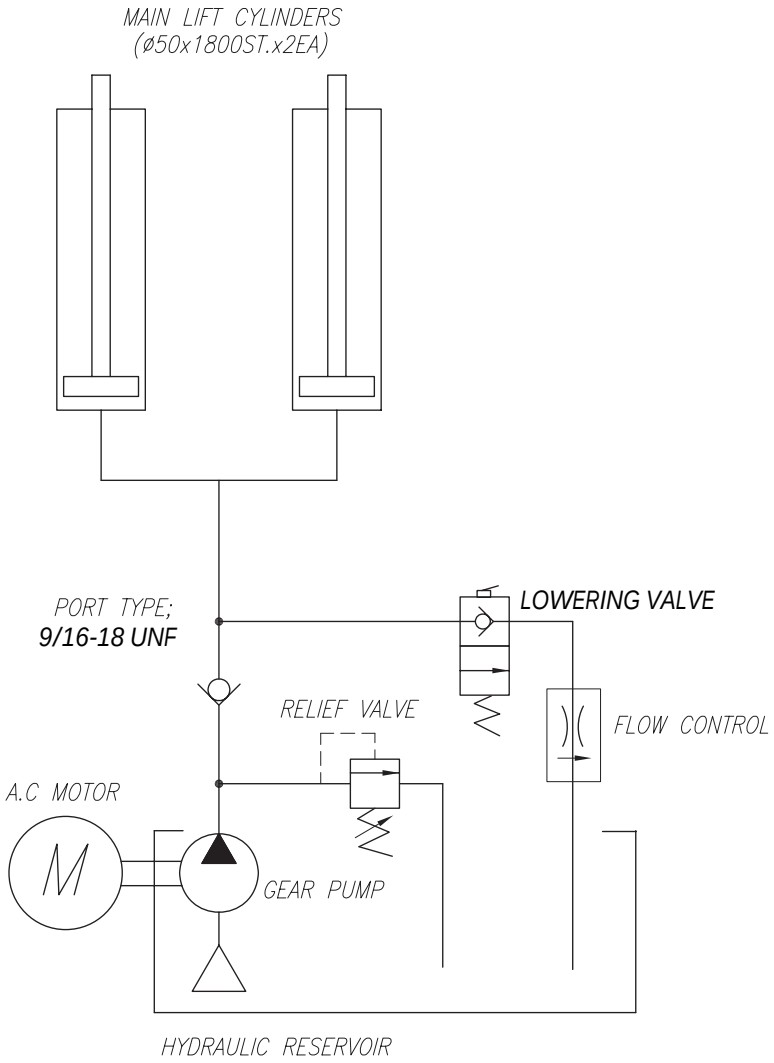
Check which carriage first touches the base plate of the post when the hoist descends and then tighten. This cable until both carriages lest on lie base plates simultaneously.



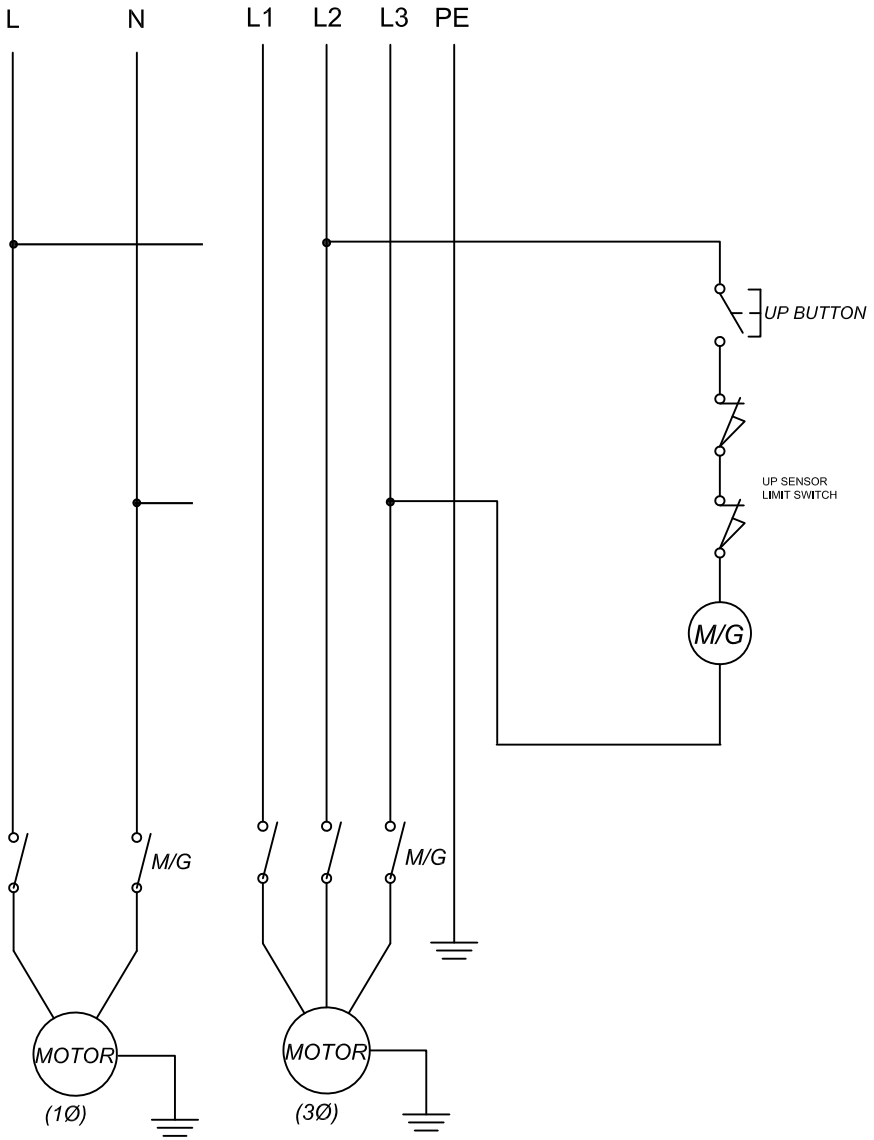
How to check the tuning adjustment.

① Check with "naked eyes" that the bottom post reached simultaneously see above.
② Check with ears
Check the sound of the parking pawls engaging in each slat during ascent.
The "clicks" should be simultaneously if not tighten the cable on the later pawl.
(The wire of the locker that sounds later shall be tightened more tensely.)

■Hydraulic Diagram

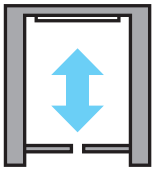


■Electrical Diagram



Check Points Before Operation

Before loading the hoist check the following points.

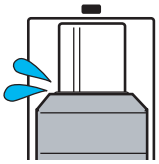


Test Operation

▶Operate the hoist up and down 2-3 times to check the full travel of the carriages.

Switch Operation

▶Check that the ascent and descent lever operate correctly.

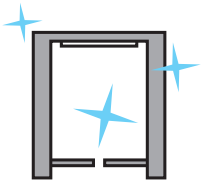


Hydraulic Check

▶Check that there are no hydraulic leaks from either cylinders, pipes, or hose joints.

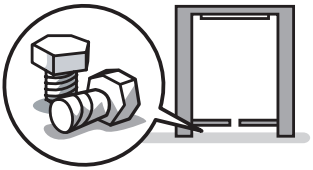
Mechanical Check

▶Check the tightness of all nuts, bolts, etc.



Exterior Check

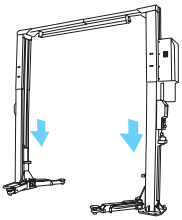
▶Check the exterior of the hoist to ensure that there is no obvious damage.



Cleanliness

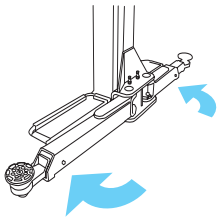
▶Check every day that the hoist and the work area are clean and free from debris or obstructions.

Operation



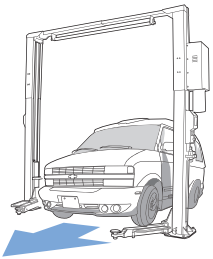
1 Prior to use

Check that the carriages and arms are at lowest position by operating the lock release lever and descend lever.



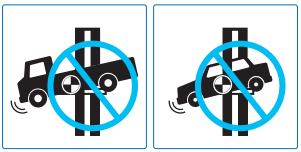
2 Prior to vehicle entry

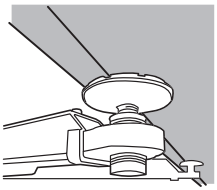
At the bottom position the arm locks are released. Swing the arms to the straightahead position as shown.



3 Vehicle entry

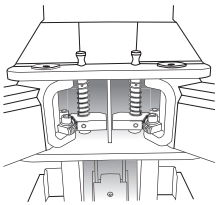
Position the vehicle centrally between posts with the vehicle's center of gravity in line with the 2 posts.





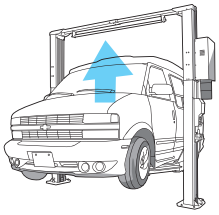
4 Arm and pad adjustment

Swing in the 4 arms under the vehicle and adjust the length of each arm so that the pick-up pad is directly underneath the pick-point recommended by the vehicle manufacturer. Each pad is fitted with telescopic thread allowing a 2-stage adjustment. Adjust the height of each pad to engage the pick-up point.



5 Check the arm locks

Raise the hoist approx. 50mm and check visually and mechanically to ensure that each arm lock is firmly engaged.



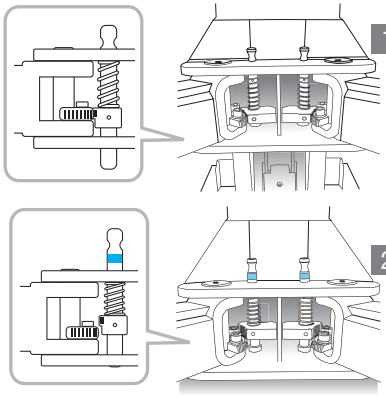
6 Ascent

After checking that the 4 pads are correctly adjusted under the pick-up points recommended by the vehicle manufacturer and that the arm locks are engaged as previously described, press the ascent push button and raise the hoist to the required working height.

7 Vehicle repairs

Before going under the hoist, check again visually the pick-up pads and arm locks. After repair of the vehicle, check the floor and work area to ensure that there are no obstructions. Press the descent push button to lower the hoist. When the hoist is at the bottom position, the arm locks are released automatically. Release the pick-up pads from the pick-up points by screwing down the telescopic threads. Swing the arms from under the vehicle to the straight-ahead position and remove the vehicle.

Operation Procedures of Each Part



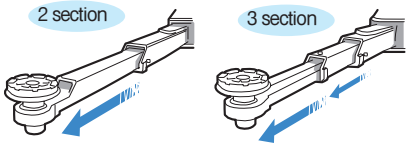
■ Arm Lock Operation

1 Ascent

When the carriages go up the arm locks are engaged automatically. Ensure that the gears controlling the locks are in mesh, i.e. fully engaged. If not, the arm must be marginally adjusted until the spring loading operates and locks successfully.

2 Descent

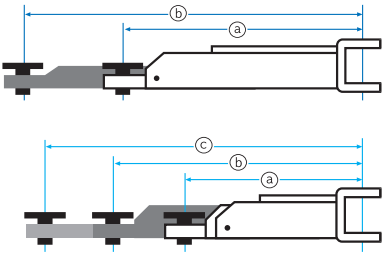
At the bottom position the locks are automatically disengaged.



■ Arm Operation

1 Adjustment of arm length

the arms are telescopic with either 2 sections or 3 sections as shown to allow the required adjustment.



▶ 26K Arm

2-section telescopic arm

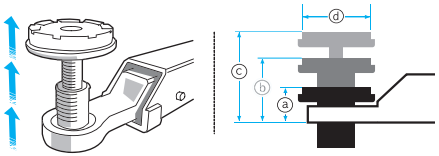
ⓐ 920 mm
ⓑ 1400 mm

3-section telescopic arm

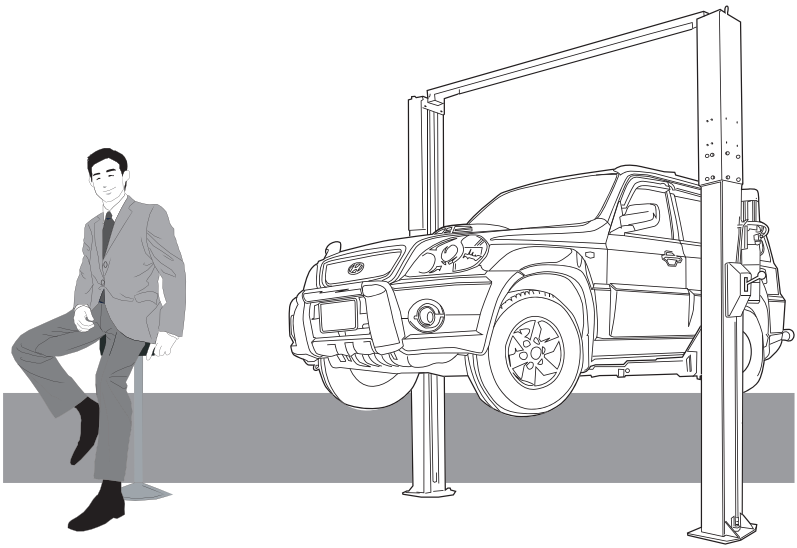
ⓐ 600 mm
ⓑ 850 mm
ⓒ 1075 mm

2 3-stage telescopic pad adjustment

The height of the pad can be adjusted 3 stages as shown below.



ⓐ 55 mm
ⓑ 75 mm
ⓒ 100 mm
ⓓ Dia.120mm

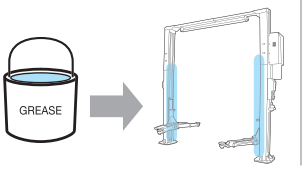


Maintenance

■ Lubrication

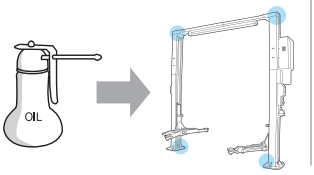
▶At 2-or 3-month intervals, depending on service usage.

1 Molybdenum disulphide grease



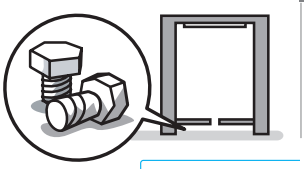
▶Apply molybdenum disulphide grease liberally to the carriage guides and the guide runners inside the posts.

2 Lubricating oil

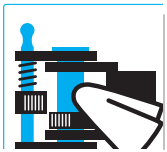


▶Lubricate with oil the upper and lower cable rollers and axles.

■ Cleanliness

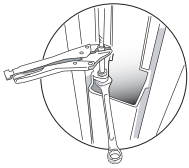


▶Check every day that the hoist is clean and that the work area is clean and free from debris or obstructions.



▶Clean safety devices at 2-or-3-month intervals, depending on service usage.
- Clean the arm lock gears and surroundings, lubricate the gear teeth and the release mechanisms. Clean the safety lock pawls, and lubricate the axles.

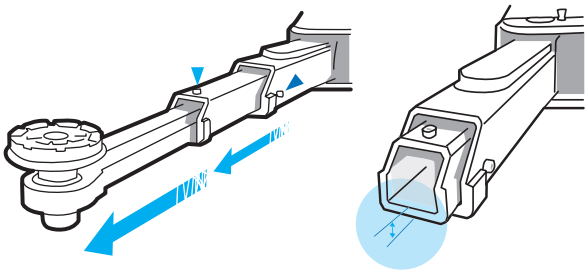
■ Synchronization Cable Adjustment



▶Check that both carriages are fully parked on the base of the hoist at the bottom position. Raise the hoist without load and listen to the audible clicks of the 2 lock pawls. The synchronization of the 2 carriages is correct when both lock pawls click simultaneously. Adjust the length of the 2 cables as shown to fulfill this.

■ Arms

▶Once a week check the condition of each arm by sliding each section to its fully extended position and ensure that the arm stop is working correctly.



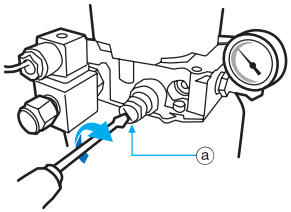
2 Power pack pressure

Danger

The power pack pressure is set by the factory in accordance with the lift's maximum rated capacity. The pressure regulator is sealed by the factory and should not be tampered with. Excessive adjustment can result in serious damage. If the hoist fails to raise the maximum rated load, contact your approved maintenance engineer.

Standard pressure settings model

SB40
14 Mpa



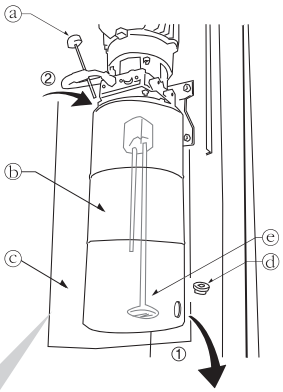
Do this action

If machine can't lift 4,000kg.

① Put the pressure gauge.
② Open the cap of relief valve and adjust put up button.

3 Oil change

Oil should be changed 2 months after installation and thereafter annually.



ⓐ Filter cap and dipstick
ⓑ Oil tank
ⓒ Drain plug
ⓓ Pump filter

① Oil filter
② Oil discharge

Oil change procedure

- Remove the cover of the hydraulic unit.
- Remove the oil filter cap and dipstick. Carefully remove the oil drain plug and allow the oil to discharge into a suitable container.
- Refit the drain plug and tighten
- Refill the oil tank with new oil
- Check with the dipstick that the level is correct ; raise and lower the hoist and recheck that the level is still correct. If not, top up with oil.
- Refit the cover

Tip

At the annual oil change, after having drained the oil tank, remove the oil tank from the pump and check the condition of the pump filter. Clean or replace as necessary.
Replace tank and follow the above procedure.

Troubleshooting

	Symptoms	Check point	Corrective Action to be taken
Wire cable and Locking device	Carriages and arms do not synchronize during lifting.	1. Check if wire rope is partially loosened. 2. Check if clip of wire rope is loosened.	1. Readjust the fixing bolts of the wire rope to ensure that the carriages are leveled. 2. Tighten clips after adjustment.
	Lift does not lower when down lever is operated or if down button is operated independently	1. Check if the safety lock is engaged in the carriage and under load. 2. Check the electrical power is available at the down button and solenoid valve.	1. Raise the lift, disengage the safety lock with the down lever, and lower the lift. 2. Repair the electrical connections if possible, alternatively lower the lift in accordance with the manual descent procedure.
	Carriages and arms do not synchronize during lowering.	1. Check if the oil at load head cover is sufficient. 2. Check if the air is mixed at the hydraulic oil.	1. Top up the oil tank to the correct level. 2. Bleed the air from the hydraulic unit
	Safety lock does not operate during lifting or lowering.	1. Check the connection of wire and connector. 2. Check the operation of manual lever.	1. Reconnect if necessary. 2. Release manual lever.
Hydraulic system and its components	Abnormal noise from the motor.	1. Rated capacity is exceeded. 2. Relief pressure is low. 3. Shortage of hydraulic oil.	1. Operate within rated capacity. 2. Adjust to 4 ton. 3. Bleed the hydraulic unit after topping up the oil level.
	Hydraulic oil leakage	1. Defective hydraulic hoses 2. Leakage from hydraulic unions 3. Lead age from cylinder high pressure seal	1. Replace the hydraulic hose. 2. Tighten the union connection 3. Request A/S center.
	Oil connections	Hydraulic fluid pollution by water or foreign debris.	1. Exchange oil (annually) (Hydraulic oil : 32CST/11liter) First oil change 2 months after installation, Therefore regular oil changes at annual intervals.
	The lift does not rise.	1. Check for oil leaks or damage to the hydraulic unit. 2. Check that the correct operating procedure is being used. 3. Check that the load is not above the rated capacity. 4. Check that the pressure valve is correctly adjusted.	1. Request A/S center. 2. Bleed the hydraulic system. 3. Limit the load to the rated capacity or less. 4. Adjust to 4ton.
	The lift does not lower.	1. Check if the safety lock is engaged and under load. 2. Check if the electric circuit is damaged.	1. Re-lower after lifting slightly to allow the safety lock to disengage. 2. Refer to electric check points.
		Lower it in accordance with the procedure to lower manually the lift during emergency, and then, request A/S center.	
Electric components	Motor does not operate and/or abnormal noise from the motor.	1. Check if the motor is damaged. 2. Check if the push button is damaged. 3. Check if the upper limit is operative. 4. Check that the wire gauge on the electrical supply is correct. 5. Check that the input voltage is no less than minimum 200V.	1. Replace the motor (Request A/S center). 2. Replace the push button (Request A/S center). 3. Re-operate after lowering the lift. 4. Replace to the cable with over 3.5mm2 diameter. 5. Increase the input power capacity
	Motor operates but lift does not rise.	1. Check that the phases are correctly connected that the motor rotates anti-clockwise. 2. Check if hydraulic lines is damaged	1. Re-operate after changing the phase connection. 2. Refer to check points for hydraulic cylinder and unit.

Check list and periodic maintenance

Inspection period	Points to be checked	Items to be checked	Inspection method	Action to be taken	Replacement period
1 week	Stopper screws for the sliding arms	worn and deformation	Visual	Replacement if necessary	only when necessory
3 months	Wire Rope	Abrasion, deformation and Breaking of wire	Visual	Replacement	2 year
	Housing for Arm Lock	Operation of lock	Visual	Replacement	only when necessory
6 months	Carriage Guide	Abrasion	Visual / Measurement	Replacement	only when necessory
1 year	Hydraulic Oil Level	Shortage of oil	Visual	Replacement	1 year
	Piston Seal	Oil leak or deformation	Visual	Replacement	only when necessory

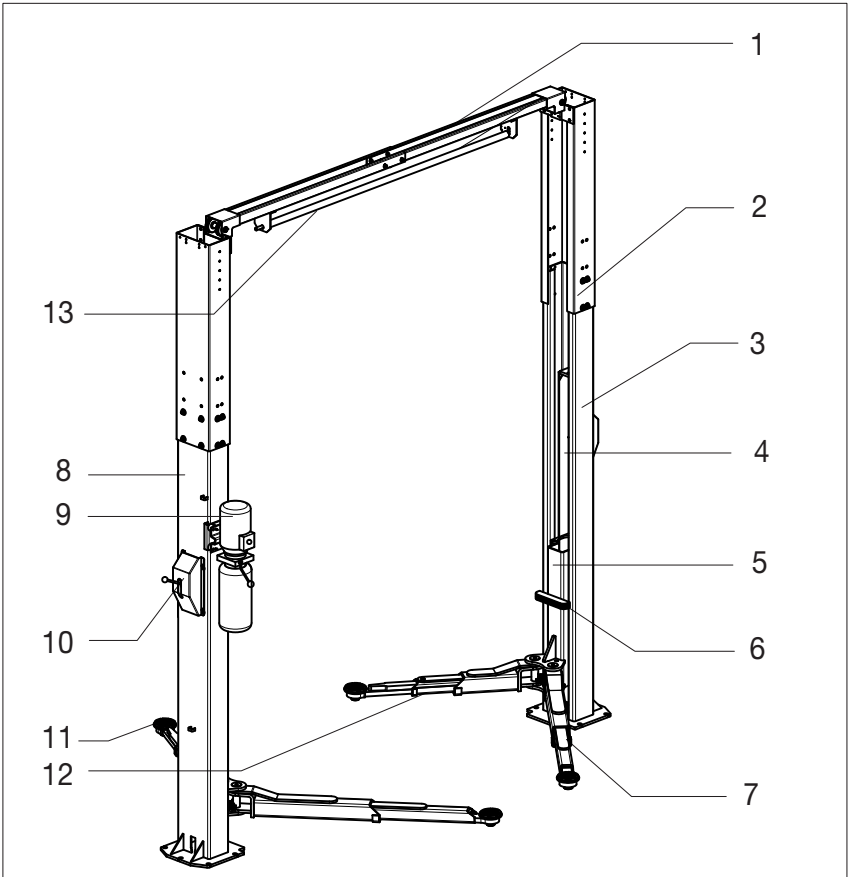
APPENDIX

PART LIST

MODEL

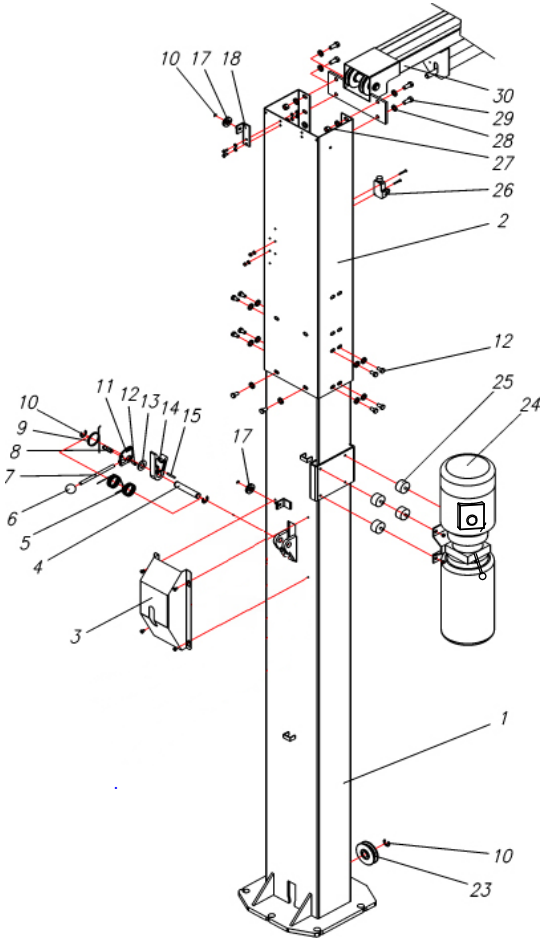
SB40

This manual was prepared in December of 2018. The Specifications/images are subject to change without prior notice, images and sketches are for illustration purposes
only.

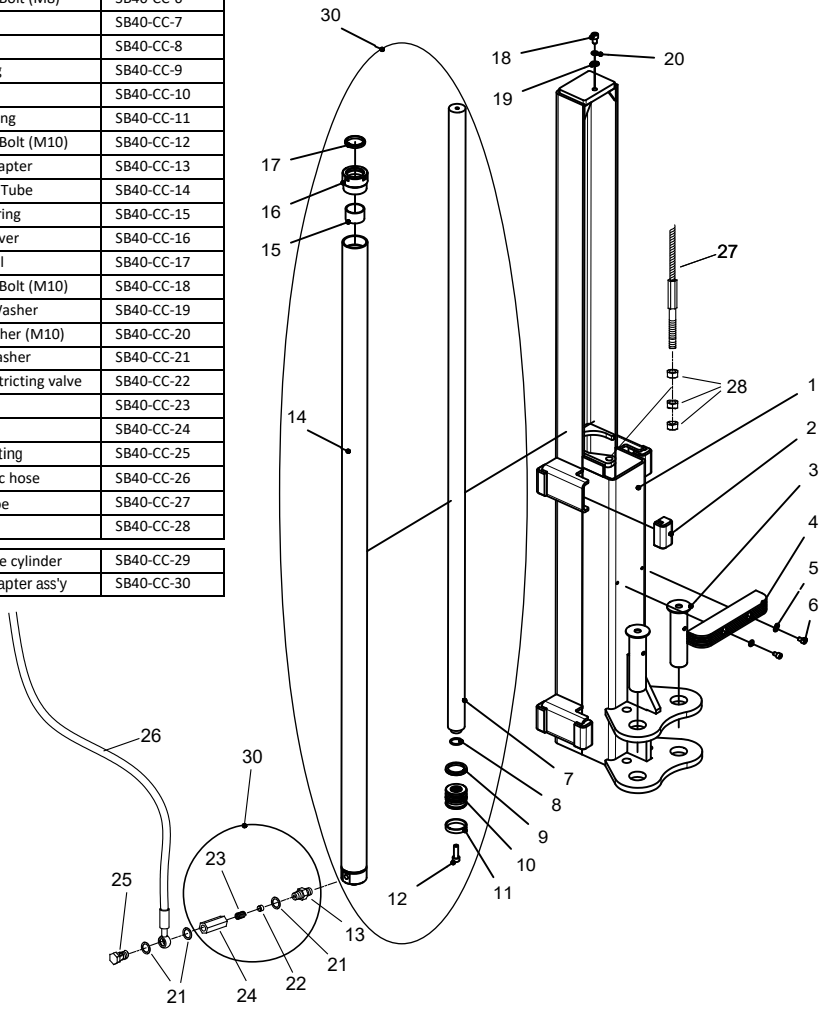


1	Cross beam	9	Power Pack
2	Post extension	10	Locker cover & Locker(inside)
3	Slave post	11	Pick-up pad
4	Cylinder	12	Short arm
5	Carriage	13	Top limit touch bar
6	Door protection rubber pad		
7	Long arm		
8	Drive post		

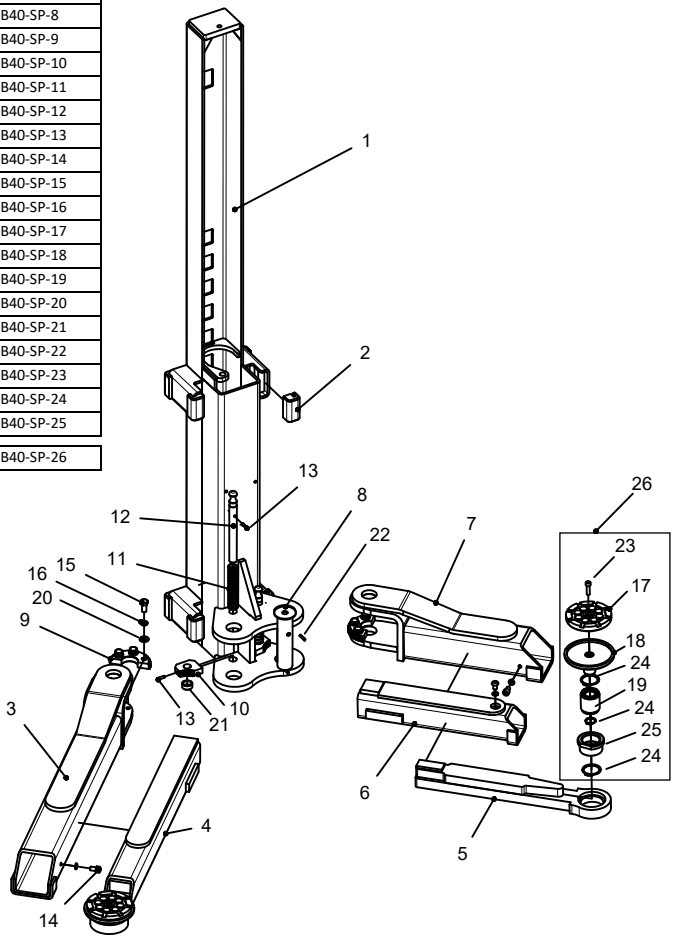
Item	Description	Part Number
1	Post	SB40-MP-1
2	Extended Post	SB40-MP-2
3	Lock Cover	SB40-MP-3
4	Shaft	SB40-MP-4
5	Lock Spring 1	SB40-MP-5
6	Lever Handle	SB40-MP-6
7	Lever Shaft	SB40-MP-7
8	Lock Wire Fixture	SB40-MP-8
9	Lock Spring 2	SB40-MP-9
10	E-Ring	SB40-MP-10
11	Lever Connector	SB40-MP-11
12	Wrench Bolt	SB40-MP-12
13	Lock Spacer	SB40-MP-13
14	Lock Block	SB40-MP-14
15	Spring Pin	SB40-MP-15
17	Lock Wire Roller	SB40-MP-17
18	Lock Wire Roller Bracket - LEFT	SB40-MP-18L
23	Wire Roller	SB40-MP-23
24	Power Unit	SB40-MP-24
25	Anit-Vibrated Rubber	SB40-MP-25
26	Up Limit Switch	SB40-MP-26
27	Hexa Nut	SB40-MP-27
28	Flat Washer	SB40-MP-28
29	Hexa Bolt	SB40-MP-29
30	Upper Support Beam	SB40-MP-30



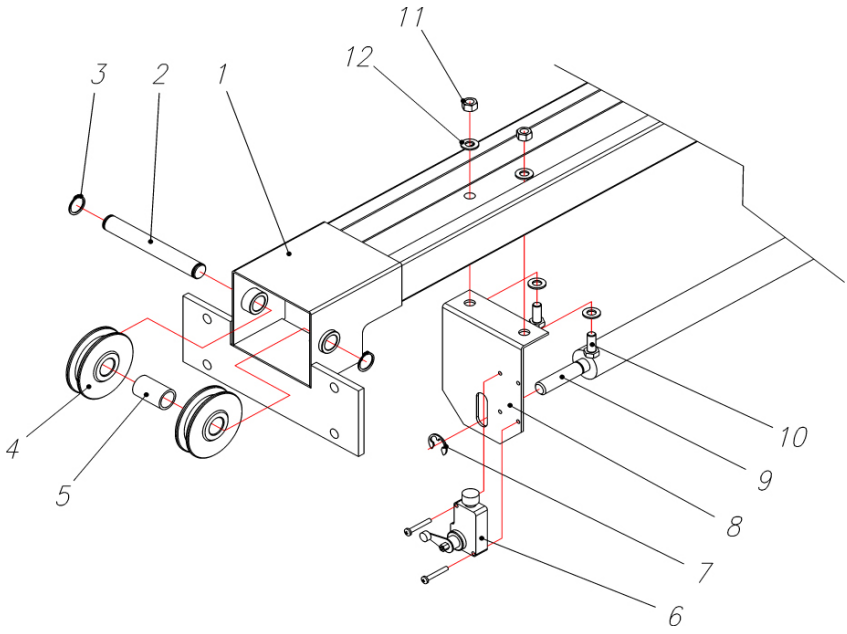
Item	Description	Part Number
1	Carriage	SB40-CC-1
2	Carry Guide	SB40-CC-2
3	Arm Shaft	SB40-CC-3
4	Door Protect Rubber	SB40-CC-4
5	Flat Washer (M8)	SB40-CC-5
6	Wrench Bolt (M8)	SB40-CC-6
7	Rod Bar	SB40-CC-7
8	O-Ring	SB40-CC-8
9	Seal Ring	SB40-CC-9
10	Piston	SB40-CC-10
11	Piston Ring	SB40-CC-11
12	Wrench Bolt (M10)	SB40-CC-12
13	Hose Adapter	SB40-CC-13
14	Cylinder Tube	SB40-CC-14
15	D.U Bearing	SB40-CC-15
16	Head Cover	SB40-CC-16
17	Dust Seal	SB40-CC-17
18	Wrench Bolt (M10)	SB40-CC-18
19	Spring Washer	SB40-CC-19
20	Flat Washer (M10)	SB40-CC-20
21	Dotty washer	SB40-CC-21
22	Flow restricting valve	SB40-CC-22
23	Spring	SB40-CC-23
24	Housing	SB40-CC-24
25	Banjo fitting	SB40-CC-25
26	Hydraulic hose	SB40-CC-26
27	Wire rope	SB40-CC-27
28	Hex nut	SB40-CC-28
29	Complete cylinder	SB40-CC-29
30	Hose adapter ass'y	SB40-CC-30



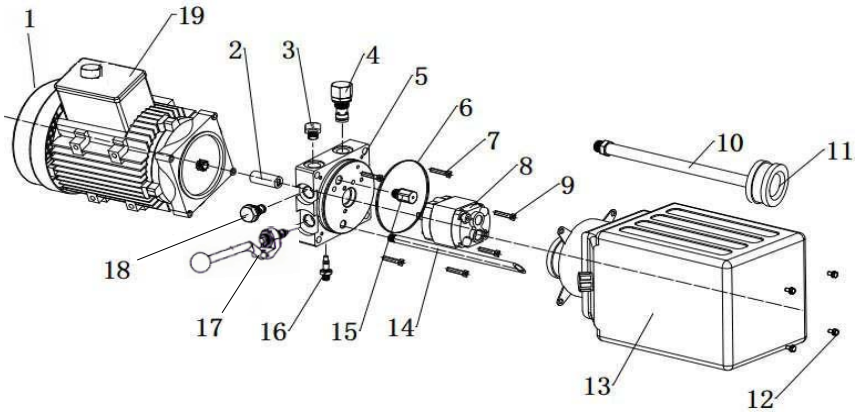
Item	Description	Part Number
1	Carriage	SB40-SP-1
2	Carriage Guide	SB40-SP-2
3	Long Arm	SB40-SP-3
4	Long Slide Arm	SB40-SP-4
5	Slide Arm (3rd)	SB40-SP-5
6	Slide Arm (2nd)	SB40-SP-6
7	Short Arm	SB40-SP-7
8	Arm Shaft	SB40-SP-8
9	Large Arm Lock Gear	SB40-SP-9
10	Small Arm Lock Gear	SB40-SP-10
11	Arm Lock Spring	SB40-SP-11
12	Gear Shaft	SB40-SP-12
13	Spring Pin	SB40-SP-13
14	Wrench Bolt	SB40-SP-14
15	Hex Bolt	SB40-SP-15
16	Flat Washer	SB40-SP-16
17	Arm Support Rubber	SB40-SP-17
18	Arm Supporter	SB40-SP-18
19	Arm and Supporter	SB40-SP-19
20	Spring Washer	SB40-SP-20
21	Lock Gear Spacer	SB40-SP-21
22	Split Pin	SB40-SP-22
23	Hex Bolt	SB40-SP-23
24	Circlip	SB40-SP-24
25	Adapter Base	SB40-SP-25
26	Lifting pad ass'y	SB40-SP-26



Item	Description	Part Number
1	Upper Support Beam	SB40-CB-1
2	Wire Roller Shaft	SB40-CB-2
3	Snap Ring	SB40-CB-3
4	Wire Roller	SB40-MP-23
5	Wire Roller Spacer	SB40-CB-5
6	Limit Switch	SB40-CB-6
7	E-Ring	SB40-CB-7
8	Limit Switch Fixture	SB40-CB-8
9	Upper Limit Touch Bar	SB40-CB-9
10	Hexa Bolt	SB40-CB-10
11	Hexa Nut	SB40-CB-11
12	Flat Washer	SB40-CB-12



Item	Description	Part Number
1	Motor	SB40-M-1
2	Shaft adaptor	SB40-M-2
3	Stopper	SB40-M-3
4	Pressure valve	SB40-M-4
5	Manifold block	SB40-M-5
6	Seal ring	SB40-M-6
7	Bolt for block	SB40-M-7
8	Pump	SB40-M-8
9	Bolt for pump	SB40-M-9
10	Suction pipe	SB40-M-10
11	Filter	SB40-M-11
12	Screw for tank	SB40-M-12
13	Fuel tank	SB40-M-13
14	Oil return pipe	SB40-M-14
15	Cusion valve	SB40-M-15
16	Throttle valve	SB40-M-16
17	Lowering handle valve	SB40-M-17
18	One-way valve	SB40-M-18
19	Pushbutton box	SB40-M-19



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